CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

CLEANUP AND ABATEMENT ORDER NO. 6-98-42
WDID NO. 6A099806N01

Requiring Mr. Thomas Erickson and Mr. Samina Naz to Cleanup and Abate the Effects of the Discharge and Threatened Discharge of Petroleum Products to the Ground Waters of the Lake Tahoe Hydrologic Unit at the Tahoe Tom's Gasoline Station

El Dorado County

The California Regional Water Quality Control Board, Lahontan Region (Regional Board), finds:

1. The Regional Board Executive Officer issued Cleanup and Abatement Order (CAO) No. 6-97-64 on April 23, 1997. The Order required the property owner, Thomas Erickson, and the operator, Erik Edeen, to cleanup and abate the effects of petroleum products discharged from underground storage tanks to the ground waters of the Lake Tahoe Hydrologic Unit at the Tahoe Tom's Gasoline Station at 4029 Lake Tahoe Boulevard in South Lake Tahoe. The Order required Mr. Erickson and Mr. Edeen to: 1) conduct quarterly sampling of all monitoring wells and submit reports; 2) identify the cause of gasoline constituents in ground water; 3) stop the release; 4) investigate the boundaries of soil and ground water contamination; and, 5) implement a corrective action plan to clean up contamination.

2. On August 15, 1997, the Regional Board received the Second Quarter 1997 Ground Water Monitoring Report for the Tahoe Tom's Gasoline Station. The report indicated that the extent of the methyl tert-butyl ether (MTBE) ground water plume was undefined.

3. On August 20, 1997, the operation of the gas station changed from Mr. Edeen to Mr. Samina Naz.

4. On September 22, 1997, the Regional Board Executive Officer rescinded CAO No. 6-97-64, because he concurred with the responsible parties' opinion that the high levels of MTBE in ground water were not due to a new petroleum release at the site. A May 14, 1997 letter from Mr. Erickson's consultant stated that MTBE was believed to be a part of the original release discovered in 1989. Regional Board staff directed Mr. Erickson to continue remedial activities, to identify the boundaries of contamination, and to submit a proposal for cleanup.

5. The Third Quarter 1997 Ground Water Monitoring and Additional Characterization Report was submitted to the Regional Board on November 5, 1997. The report showed that petroleum hydrocarbons had increased in concentrations in five monitoring wells and the MTBE plume extended at least 400 feet from the underground storage tank basin. The highest concentrations were detected in off-site monitoring well MW-8 and were:

Benzene	10,064 µg/l
Toluene	11,656 µg/l
Ethylbenzene	1,416 µg/l
Xylenes	1,988 µg/l
MTBE	91,524 µg/l
Total Petroleum Hydrocarbons (Gasoline)	119,000 µg/l

In the report, the consultant was unable to explain the cause of increased petroleum hydrocarbons associated with releases at the site.

6. Following a request by Regional Board staff, the responsible parties implemented another site characterization in December 1997 to define the extent of soil and ground water contamination. The Fourth Quarter 1997 Ground Water Monitoring and Additional Characterization Report states that a hydropunch investigation detected MTBE in ground water more than 600 feet from the underground storage tank basin. Though essentially defined laterally, the ground water plume's stability was unknown and threatened downgradient municipal and private drinking water wells.

7. A December 1, 1997 Corrective Action Plan discussed three remediation alternatives and recommended conducting pilot tests at the site to evaluate the most effective remedial option. A revised workplan, dated March 10, 1998, for conducting pilot tests and installing monitoring wells was approved by Regional Board staff.

8. On May 27, 1998, the Regional Board received the Additional Characterization, First Quarter 1998 Ground Water Monitoring, and Corrective Action Plan/Report for the Tahoe Tom's Gasoline Station. The report described the installation of additional monitoring wells and the results of pilot tests. About two feet of free product was discovered on ground water in the recently installed recovery well, 25 feet from the underground storage tank basin. Laboratory results showed the following dissolved concentrations in ground water from recovery well RW-1:

Benzene	9,800 µg/l
Toluene	55,600 µg/l
Ethylbenzene	2,960 µg/l
Xylenes	9,920 µg/l
MTBE	1,230,000 µg/l
Total Petroleum Hydrocarbons (Gasoline)	1,310,000 µg/l

During an aquifer pump test, the amount of free product increased to 9.25 feet in the recovery well. The report did not discuss the source of free product at the site but recommended that a skimmer pump be installed in the recovery well to remove free product. The report also recommended that cleanup be implemented by (1) pumping and treating ground water to contain the plume and (2) operating an air sparge/soil vapor extraction system using heated air to remediate soil and ground water pollution.

9. The beneficial uses of ground water in the area as designated in the *1995 Water Quality Control Plan for the Lahontan Region*, include municipal and domestic supply, agricultural supply, fresh water replenishment, and industrial service supply.

10. The 1995 *Water Quality Control Plan for the Lahontan Region* establishes water quality objectives for the protection of beneficial uses. Those objectives include the following Maximum Contaminant Levels (MCL) and Action Levels (AL) that were established by the California Department of Health Services as safe levels to protect public drinking water supply:

Benzene	1 µg/l (MCL)
Toluene	150 µg/l (MCL)
Ethylbenzene	700 µg/l (MCL)
Xylenes	1750 µg/l (MCL)
MTBE	35 µg/l (AL)

The *Water Quality Control Plan* contains the following narrative taste and odor objective for the Lake Tahoe Hydrologic Unit:

"Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For ground waters designated as municipal and domestic supply, at a minimum, concentrations shall not exceed adopted secondary maximum contaminant levels specified in...Title 22 of the California Code of Regulations which is incorporated by reference into this plan."

The following Taste and Odor Thresholds (TOT) are proposed as secondary water quality goals by the United States Environmental Protection Agency for drinking water. Petroleum concentrations above these levels would not comply with the narrative taste and odor objective in the basin plan:

Toluene	42 µg/l (TOT)
Ethylbenzene	29 µg/l (TOT)
Xylenes	17 µg/l (TOT)
MTBE	20 µg/l (TOT)
Total Petroleum Hydrocarbons (Gasoline)	50 µg/l (TOT)

The more stringent numeric standard is the applicable water quality objective for each constituent.

11. The ground water concentrations of Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, and Total Petroleum Hydrocarbons as Gasoline (Findings No. 5 and 8) exceed water quality objectives which are protective of water quality for ground water specified in the 1995 *Water Quality Control Plan for the Lahontan Region*. The concentrations adversely affect the ground water for its designated uses listed in the 1995 *Water Quality Control Plan for the Lahontan Region*: municipal and domestic supply, agricultural supply, fresh water replenishment, and industrial service supply. The levels of waste in ground water, therefore, constitute a pollution, as defined in Section 13050 of the California Water Code.

12. The underground storage tank basin on the subject property overlies shallow ground waters and is located approximately 600 feet upgradient from the private drinking water well at the Mark Twain Motel, 1,200 feet upgradient from private drinking water wells for the Shenandoah Lodge and the Station House Inn and from municipal supply wells for the South Tahoe Public Utility District (STPUD) and the Lakeside Mutual Water Company, and approximately 2,000 feet from the south shore of Lake Tahoe used as a drinking water source for the Lakeside Mutual Water Company. The discharge of petroleum products from the underground storage tanks has polluted the ground water and threatens water supply for private and municipal wells and the surface waters of Lake Tahoe.

13. The discharge of petroleum products to the ground waters of the Lake Tahoe Hydrologic Unit as described in Findings No. 5 and 8 above violates a prohibition for the Lake Tahoe Hydrologic Unit contained in the 1995 Water Quality Control Plan for the Lahontan Region. Specifically, the discharge violates and threatens to violate the following discharge prohibition in the Plan:

"3. The discharge of waste earthen material or of any other waste as defined in Section 13050(d) of the California Water Code which would violate the water quality objectives of this plan, or otherwise adversely affect the beneficial uses of water designated by this plan, is prohibited."

14. This enforcement action is being taken by this regulatory agency to enforce the provisions of the California Water Code and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, of the California Code of Regulation.

THEREFORE, IT IS HEREBY ORDERED that, pursuant to California Water Code Sections 13267 and 13304, Thomas Erickson and Samina Naz shall:

1. Conduct investigation and cleanup tasks by or under the direction of a California registered geologist or registered civil engineer experienced in the area of ground water pollution cleanup.

2. Not cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into waters of the state.

3. By **June 22, 1998**, commence free product recovery beneath the Tahoe Tom's Gasoline Station, in accordance with Section 2655 of the California Underground Storage Tank Regulations (UST Regs) and as proposed in the May 1998 Ground Water Monitoring Report and Corrective Action Plan.

4. By **June 26, 1998**, submit a workplan to the Regional Board with the following information:

   a) describe the current leak detection measure(s) in place;
   b) discuss the results of all leak detection methods conducted since July 1, 1997;

c) describe a method to identify the cause of free product at the site, to be implemented by **June 30, 1998**;
d) list an alternate method to identify the cause of free product, to be implemented immediately upon a determination that the primary method failed to identify the cause of free product at the site.

5. Beginning **July 1, 1998**, and monthly thereafter, collect the following items:

a) water samples from monitoring wells;
b) ground water elevations from monitoring wells;
c) the elevation of Lake Tahoe, and
d) water samples from the Mark Twain Motel well at 947 Park Avenue, the Station House Inn well at 901 Park Avenue, and the STPUD Blackrock #2 well on Blackrock Road, to be analyzed within **48 hours.** Should laboratory results indicate detectable petroleum hydrocarbons in any of the drinking water wells, send the data to the Regional Board and the El Dorado County Environmental Health Department within **one working day** after receipt from the laboratory.

6. By **July 14, 1998**, submit a report to the Regional Board that contains:

a) a discussion of the cause of free product on groundwater;
b) the approximate date of the free product release;
c) the type of substance released and approximate volume;
d) the date the release was stopped;
e) actions taken to prevent further releases;
f) an explanation why previous leak detection method(s) failed to detect the release or if it was detected, why it was not reported to the local agency in accordance with Article 5 of the UST Regs;
g) description of actions taken to remedy the problems with the leak detection and/or reporting systems;
h) discussion of actions to remove free product from beneath the site and include items from Section 2655 of the UST Regs;
i) geologic cross-sections across the width (west to east) of the ground water plume at the gas station and for the length of the plume;
j) the final designs for plume containment and soil and groundwater remediation, as described in the May 1998 Corrective Action Plan; and
k) a schedule for installing, permitting, and operating the air sparge/soil vapor extraction system.

7. Beginning **July 16, 1998**, and monthly thereafter, submit the preliminary results of ground water samples and water elevations for monitoring wells and Lake Tahoe collected by the first day of that month, to the Regional Board and STPUD.

8. By **August 7, 1998**, conduct the following actions:

a) implement off-site plume containment referenced in Order No. 6 above;
b) provide notice to the Regional Board within **one working day** of August 7, 1998, that the groundwater extraction system is in operation;

c) provide notice to the Regional Board within **48 hours** if the ground water extraction system fails to operate for more than 12 hours at a time;
d) implement soil and ground water remediation according to the schedule referenced in Order No. 6 above and as approved by Board staff;
e) remove free product from ground water before implementing air sparging; and
f) install a piezometer adjacent to Lake Tahoe, so that the regional ground water flow can be discussed in monthly monitoring reports.

9. Beginning **August 15, 1998,** and monthly thereafter, submit progress reports that contain:

a) results of monitoring well samples and ground water elevations, collected by the first day of the previous month;
b) cumulatively tabulated ground water monitoring data for Benzene, Toluene, Xylenes, Ethylbenzene, MTBE, and Total Petroleum Hydrocarbons in ground water;
c) discussion whether alcohols and ethers, other than MTBE, exist in ground water;
d) maps showing ground water pollution contours for Benzene, MTBE, and Total Petroleum Hydrocarbons;
e) a potentiometric map that includes:

i) water table contours for monitoring wells;
ii) the direction of ground water flow and the calculated gradient; and
iii) regional ground water flow to Lake Tahoe.

f) a map showing the location of the drinking water wells listed in Finding No. 12;
g) discussion regarding free product at the site and efforts to remove it;
h) a table listing the periods when the free product skimmer fails to operate for 12 hours or more, and provide an explanation;
i) discussion regarding the installation and operation of the air sparge/soil vapor extraction system and the ground water extraction system; and
j) a workplan to define the plume boundaries, if boundary monitoring wells show detectable levels of hydrocarbons indicating the plume is migrating.

10. By **October 6, 1998**, submit a technical report with the following items:

a) permits and paperwork from applicable agencies to operate the remediation systems;
b) information regarding remediation removal rates, influent and effluent concentrations, area of influence of the systems;
c) a site map that shows the area of drawdown of the groundwater plume;
d) description of cleanup and abatement activities on and off the gas station property;
e) discussion of the effectiveness of the remediation systems to contain ground water pollution and prevent impacts to the municipal and private drinking water wells, based upon monitoring well data, potentiometric maps, and a fate and transport study; and

f) a proposal to expand or modify the remediation systems if the systems are not as effective as designed or if the area of drawdown from pumping does not capture the portion of the plume out to 50 ppb MTBE.

Failure to comply with the terms or conditions of this Order will result in additional enforcement action which may include the imposition of administrative civil liability pursuant to Sections 13268 and 13350 of the California Water Code or referral to the Attorney General of the State of California for such legal action as he or she may deem appropriate.

Ordered by:_____ Dated:_____

HAROLD J. SINGER
EXECUTIVE OFFICER